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Nov. 1934

FINAL REPORT OF THE MISSISSIPPI F.E.R.A. SCREW WORM CONTROL, AS OF NOVEMBER 29, 1934

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A rather full report of this work was submitted to cover the period September 15 to November 1, as of November 1, 1934. The work was continued during the period November 2 to November 29 inclusive by the employment of the four district supervisors, who were kept in their respective territories as assigned at the beginning of the work. One county supervisor was retained during this period at Hattiesburg to complete the summaries of the questionnaires and attend to fiscal matters. Two clerks were retained for November 2, and one clerk for November 2 to 29 inclusive. During the November period there was a considerable outbreak of screw worms in the northern counties the first part of the month, and a considerable number of cases was reported over the entire area during the first half of the month. During the latter half of the month the weather was considerably cooler, and very few cases of screw worms were had in any county. During this period approximately 175 gallons each of benzol and pine tar oil were distributed by county agents. This left approximately 100 gallons of each of the materials distributed in small lots in the several counties. no further purchases were made during November.

The district supervisors used considerable time during November in an attempt to collect Gulf Coast ticks for experimental

studies during the winter, but only a very few ticks were obtained. It was indicated that the infestation of ticks had been rather light during the fall, and practically none could be found in any part of the territory during November. Soil temperatures were taken by district supervisors at several points in their respective areas. ~~and~~ These data indicate that the soil temperatures decreased considerably during the month, and that the latter part of the month practically all of the soil temperatures at a depth of four inches were near or below 60° F. These temperatures were taken in order to obtain data as to the possibility of the development of Cochliomyia pupae in the soil. From our work at Uvalde it has been indicated that there is little or no development below 60°. The records made in Mississippi confirm prior data. ~~No further purchases of benzol and pine tar oil were made during the month of November.~~

FINANCIAL STATUS.

All of the benzol and pine tar oil was purchased through Mr. J. E. McNair, purchasing agent of the Mississippi F. E. R. A., and as we did not obtain the final vouchers for each of these purchases and have not at this time obtained a report from Mr. McNair of the exact cost of the materials, it will be necessary to present the approximate cost of these materials as was indicated in the letter from Mr. McNair as to their cost.

MISSISSIPPI F. E. R. A. ALLOTMENT

	Allotted:	Paid:
Salaries	$2800.00	$2941.96
Subsistence and mileage of county and district supervisors	2300.00	2189.30
Materials and miscellaneous	2400.00	2217.39
Totals	7500.00	7348.65
Unexpended balance		151.35

Bureau allotment $500.00; spent $399.34; balance $ 100.66.

This presentation leaves a difference of approximately $3.00 between our balance and that of Mr. McNair, which may be accounted for as stated above. While the work has not been formally closed, it was understood when I was in Jackson, Miss. November 30 that no more requisitions would be drawn on the F.E.R.A. funds.

SUMMARY OF CONCLUSIONS ON WORK IN MISSISSIPPI.

During the month of November soil temperature records were obtained from Mr. L. Cockerham, in charge of the Biloxi station of the Bureau of Entomology and Plant Quarantine for several Counties in Alabama. The meteorological records for Mississippi and other Southeastern states have been obtained for the year 1934 and parts of the year 1933. These, with the soil temperature records and the general summaries of the Weather Bureau records over the past several years have been studied during November. All of these records indicate that the temperatures, both soil and air, have been above normal in Mississippi during the past three years. This has been especially true of soil temperatures and of the air temperature during winter months.

(Quote letter)

METHODS OF ADEQUATELY MEETING THE SITUATION IN MISSISSIPPI AND IN TEXAS.

Probably the best methods of approaching the situation at the present time are to make thorough physiological studies of the fly or flies concerned in the infestation of wounds. This is a rather broad and complicated subject, but to adequately meet the situation it is very desirable to know the reactions, habits and development of the flies concerned under the different ecological conditions to which they are subjected. We have felt for several years that these data were needed, and Mr. Cushing's and Doctor Patton's work in determining that we probably have two species of Cochliomyia concerned in the infestation of wounds and that one is the primary and the other probably a secondary fly, has stimulated work along this line. It is my opinion that what we sometimes suppose to be two species of fly (not necessarily Cochliomyia) are physiological and morphological strains induced by environment and food conditions. Doctors Laake and Melvin have approached this task to some extent, and appear to be developing quite conclusive data in their work this season as to foods and ~~some~~ temperature conditions on effect of fly development. The work in Mississippi has given us a broader outlook on general climatic conditions affecting wound infestations and probable ~~designation (?)~~ dissemination of flies causing wound infestation during an unusual climatic period.

As for procedure in the future, I would suggest ~~[illegible]~~ :

(1) That the physiological and morphological studies being made by Doctors Laake and Melvin and Mr. Cushing be continued and extended as far as feasible;

(2) That climatic and ecological data be correlated with any screw worm outbreaks that ~~might~~ occur in any sections;

(3) That climatic and ecological conditions be studied in association with the physiological and morphological studies under laboratory controlled conditions;

(4) That parasite and predator studies of blowflies be continued, especially in the Southeast, to determine if they are any considerable factor of control under different climatic conditions in that area and possible establishment of species in new areas. There are possibilities of valuable unknown species in U.S. yet.

(5) That work be taken up looking toward control by diseases of blowflies, especially in areas where screw worm outbreaks are sporadic. This might possibly lead to some explanation of the fact being fewer blowflies in areas along coast lines and the possibility of having diseases transmitted by parasites, predators or other methods.

(6) That wound treatment work should be continued, especially as to obtaining a feasible worm killer that could be used to kill larvae deep in the wounds and possibly as to the use of wound dressings. While it is not indicated that a larvacide might be obtained that would sink into the wound and be absorbed without some deleterious effect on the animal treated, there may be possibilities along this line. Such a treatment would be very advantageous to the ranchmen.

(7) That the work of ranch management under screw worm conditions ~~should~~ be continued and some method ~~should~~ be established by which the screw worm could be controlled under open range conditions as found in Mississippi. This is a most promising and needed work.

(8) That work ~~should~~ be continued as to the feasibility of trapping adult flies and the destruction of the immature stages to obtain the most adequate and feasible methods.

Regarding the possible use of relief labor in screw worm outbreaks in Mississippi, it is my opinion that such labor can be used only during actual screw worm outbreaks. And while it is my opinion that no outbreaks will occur after a normal climatic ~~logical~~ season, there is little work that could be done in Mississippi at this time by relief labor except possibly to use this labor in some control of forest range burning during the winter and early spring months, in order to obtain further data on the control of the Gulf Coast tick by range burning. It is also very desirable that demonstration or practice areas be established in the open range sections of Mississippi in order that some possible method of controlling livestock under ticky or screw worm conditions may be devised. As suggested above, it would be very desirable to have men in several locations obtain further data on climatic conditions under which screw worms and ticks occur, and this work might be done by trained men on F. E. R. A. rolls. The situation should be kept under close observation during the winter and early Spring, and collections of flies under several different conditions should be made to determine species present in order to forestall any in-

(Over)

dreaded outbreak.